UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,568	02/15/2002	Nicholas P. Wilt	215514	3290

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EXAMINER
PAPPAS, PETER

ART UNIT	PAPER NUMBER
2671	5

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.		Applicant(s)	
Office Action Summary	10/077,568		WILT ET AL.	
	Examiner		**Art Unit**	
	Peter-Anthony Pappas		2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2003*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-18* is/are pending in the application.

    4a) Of the above claim(s) *1-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Group I.   Claims 1-3, drawn to a graphics arbiter, in regards to the

notification to a first and second display source, classified in class

345, subclass 535.

Group II.   Claims 4-10, drawn to gathering, transforming (i.e. texture

mapping, lighting) and transferring display memory surface set

memory information to output display memory, classified in class

345, subclass 581.

Group III.   Claims 11-18, drawn to presentation surface sets displaying

and merging received display information, classified in class 345,

subclass 629.

1.   Invention Groups I, II and III are related as subcombinations disclosed as

usable together in a single combination. The subcombinations are distinct from

each other if they are shown to be separately usable. In the instant case,

invention: Group I has separate utility such that the graphics arbiter can be used

to arbitrate source data without the need for subsequent processing, as recited in

Groups II and III; Group II has separate utility such that any graphics arbitration

function, in addition to that recited in Group I, can serve as a source for

gathering, transforming and/or transferring; Group III has separate utility such

that any graphics arbitration function, in addition to that recited in Group I, can

serve as a source for displaying and/or merging and does not rely solely on that

recited in Group II. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for: Group I is not required for Group II; Group II is not required for Group III; and Group III is not required for Group I, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

A mailed response to a restriction requirement was received on 12/29/03, from John T. Bretscher, in which an election was made with traverse to prosecute the invention of Group III, claims 11-18. Claims 1-10 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The applicant's traversal is unpersuasive, because these inventions are considered distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter. The mere assertion that the inventions noted above are not distant or not a burden on the Office is not persuasive, because such assertion is not supported by substantive argument.

Double Patenting

2.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.

See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3.   Claims 11, 12 and 14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2-4 and 7 of copending Application No. 10/074,286, in view of Engstrom et al. (U.S. Patent No. 5, 801, 717). Although the conflicting claims are not identical, they are not patentably distinct from each other.

This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4.   In regards to claim 11 Application No. 10/074,286 teaches a presentation surface set comprising a presentation flipping chain, which is comprised of a primary presentation surface and a presentation back buffer. See pages 16-17, claims 1-3. Application No. 10/074,286, however, fails to explicitly teach a

presentation surface set comprising a presentation flipping chain and a overlay

flipping chain, wherein the overlay flipping chain is comprised of a overlay

primary surface and an overlay back buffer. Engstrom et al. teaches surface

structures can be implemented through the use of surface objects. A display

device interface can be represented by a display device object, which creates

and maintains additional objects such as surface objects, for the display device.

To create a surface object a function is called in which a new surface object is

created that is representative of a surface and the underlying surface memory

that holds said surface. Flipping structures can be created in this manner and

each represent a front buffer, and one or more back buffers. See column 4, lines

26-67, and column 18, lines 27-36. The front buffer typically holds a completed

pixmap that is ready for use through the display device interface. See column 14,

lines 13-15. Surface structures can also include overlays, which consist of the

compositing of a plurality of image layers. See column 12, lines 62-67, and

column 13, lines 1-14. It is noted that the primary presentation surface and

presentation back buffer are both considered to be and/or include buffers for the

storage of information. Additionally, a primary presentation surface is considered

a front buffer, while a presentation back buffer is considered a back buffers.

It would have been well known and obvious to one skill in the art, at the

time of the applicant's invention, to realize a use for the implementation of

multiple flipping chains (flipping structures) controlled by a display device object,

as taught by Engstrom et al., so to allow for additional related data for a given

object be stored simultaneously in an additional, possibly connected, flipping

chain, containing such additional data as overlay, alpha and/or z-order

information.

5.   In regards to claim 14 Application No. 10/074,286 teaches portions of the

presentation back buffer (back buffer) are changed relative to a buffer

immediately preceding the presentation back buffer (i.e. front buffer) in the

presentation flipping chain. The rationale disclosed in the rejection of claim 11,

in regards to the use of a flipping chain, is incorporated herein. Applicant

discloses on page 8, paragraph 30, that buffers in the presentation surface set

are "flipped" so that the buffer that was the presentation back buffer (back buffer)

and that contains the latest frame written by the display source becomes the

primary presentation surface (front buffer). The display device then reads from

this new primary presentation surface and displays the latest frame. Also during

the flip, the buffer that was the primary presentation surface becomes the

presentation back buffer.

6.   In regards to claim 12 Application No. 10/074,286 teaches a graphics

arbiter (display interface driver) comprises the components: software executable,

hardware and firmware executable. See page 17, claim 7.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

8.   Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engstrom et al. (U.S. Patent No. 5, 801, 717).

9.   In regards to claim 11 Engstrom et al. teaches a display device interface and methods for managing surface memory, through the use of surface structures. Surface structures can be implemented through the use of surface objects. A display device interface can be represented by a display device object, which creates and maintains additional objects such as surface objects, for the display device. To create a surface object a function is called in which a new surface object is created that is representative of a surface and the underlying surface memory that holds said surface. Flipping structures can be created in this manner and each represent a front buffer, and one or more back buffers. See column 4, lines 26-67, and column 18, lines 27-36. The front buffer typically holds a completed pixmap that is ready for use through the display device interface. See column 14, lines 13-15. Surface structures can also include overlays, which consist of the compositing of a plurality of image layers. See column 12, lines 62-67, and column 13, lines 1-14. The collection of surface objects, be it one or more, under the control of the display device object is considered the presentation surface set. It is noted that the primary presentation surface, presentation back buffer, overlay primary surface and overlay back buffer are all considered to be and/or include buffers for the storage of information. Additionally, a primary presentation surface and overlay primary surface are considered front buffers, while presentation back buffer and overlay back buffer are considered back buffers.

Engstrom et al. additionally teaches the relationship between application programs ("applications") 52, a display device interface 50 (with an optional hardware emulation layer 58), a hardware abstraction layer (HAL) 54, and a display hardware 56, which includes hardware responsible for the display of 2D and 3D rendered graphics and animation, video, text and still images. See column 6, lines 41-67, column 7, lines 1-4, and Fig. 2. Elements 50, 58 and 54 are considered the display interface driver. Engstrom et al., however, fails to explicitly teach the use of said display device interface for the merging of display information received from the primary presentation surface and the overlay primary surface.

It would have been well known and obvious to one skilled in the art, at the time of the applicant's invention, to use said display interface and HAL as the receiving element for display information, i.e. from a front buffer in which display information is stored, before said display information could be presented via display hardware, because it is of convention that display hardware requires a means (i.e. display device interface and HAL) by which to interface with a computer system, in which the display hardware is respectively housed.

10.   In regards to claim 12 Engstrom et al. teaches that the HAL can be a part of the display hardware 56 or can be implemented in software. See column 6, lines 53-58. Engstrom et al., however, fails to explicitly teach that the display interface driver comprises firmware executable components.

It would have been well known and obvious to one skilled in the art, at the time of the applicant's invention, that a display interface driver would include a

firmware executable, because by doing so would allow for the display interface

driver and any connected hardware, to be accessed through said display

interfaced drive, to be utilized via any standard interface means and thus not

require any additional modifications to be made so to allow for the use of said

display interface drive and/or connected hardware.

11.   In regards to claim 13 Engstrom et al. teaches the display device object

can also create, in addition to a surface object, a palette object and a clipper

object. A surface object can include a pixmap, an alpha buffer or a Z buffer. See

column 17, lines 33-42. Each alpha value, in said alpha buffer, describes the

degree to which a corresponding pixel (per-pixel) is transparent. See column 12,

column 55-61. A palette object represents a color table (color-key) and can be

attached to pixmap surfaces such as an overlay. See column 17, lines 43-52,

and column 18, lines 1-12.

12.   In regards to claim 14 Engstrom et al. teaches front and back buffers are

linked to one another via an attachment link (i.e. see Fig 1, 162). See column 14,

lines 36-38. Additionally, pointers controlled by the display interface are used to

swap data between front and back buffers. See column 14, lines 39-56.

13.   In regards to claim 15 Engstrom et al. teaches a computer system 20,

which includes a CPU 28, memory system 30 and bus structure 32. Memory

system 30 comprises of main memory 38 and secondary storage 40, wherein

main memory includes RAM and ROM and secondary storage includes

computer-readable medium such as floppy disks, hard drives, etc. See column 5,

lines 38-64, and column 6, lines 29-39. It is noted that said main memory and

secondary storage are considered to provide the means by which computer program instructions can and are stored. Additionally, the rationale disclosed in the rejection of claim 11 is incorporated herein.

14.   In regards to claim 16 the rationale disclosed in the rejection of claim 15 is incorporated herein. In addition, the system of claim 15 is considered to be performing the method as claimed.

15.   In regards to claim 17 the rationale disclosed in the rejection of claim 13 is incorporated herein.

16.   In regards to claim 18 the rationale disclosed in the rejection of claim 16 is incorporated herein. In addition, the system of claim 15 is considered to be performing the method as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter-Anthony Pappas whose telephone number is 703-305-8984. The examiner can normally be reached on M-F 8:15am-5:45pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 703-305-9798. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Peter-Anthony Pappas
Examiner
Art Unit 2671

PAP

MARK ZIMMERMAN
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